

~~a first binding energy greater than about 15.5 eV; and (d) molecular hydrogen ion having a binding energy greater than about 16.4 eV.~~

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A fuel cell according to claim <sup>60</sup>52, wherein the increased binding energy species is hydride ion having a binding energy of about 3.0, 6.6, 11.2, 16.7, 22.8 29.3, 36.1, 42.8, 49.4, 55.5, 61.0, 65.6, 69.2, 71.53, 72.4, 71.54, 68.8, 64.0, 56.8, 47.1, 34.6, 19.2 or 0.65 eV.

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A fuel cell comprising:

a first walled structure defining an internal volume, wherein at least one wall comprises a cathode;

a second walled structure defining an internal volume containing an anode;

a salt bridge connecting the internal volumes of said first and second walled structures;

a source of reductant; and

a source of hydrino atoms. - -

## REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Claims 1, 2, 4-6 and 10-55 are pending in the application.

Basis for new claims 15, 30, 31 and 46-55 can be found in the originally filed specification and claims. No new matter has been added. No claims have been amended to overcome prior art.

New claims 16-29 and 32-45 recite suitable catalysts for forming hydrino atoms, which hydrino atoms are used in the novel fuel cell claimed. Basis for these catalysts can be found in the present specification and Applicant's prior applications PCT/US90/1998; PCT/US91/8496; PCT/US94/02219; and PCT/US96/07949, which are incorporated by

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reference on page 3, lines 26-27 of the present specification. No new matter has been added. No claims have been amended to overcome prior art.

The Applicant's counsel thanks Examiner Kalafut for the courtesy extended during the personal interview of June 23, 1999. It is sincerely believed that the interview materially advanced the prosecution of the subject application.

The rejection of claim 1-14 under 35 U.S.C. §101 is respectfully traversed. The Applicant respectfully submits that in advancing this rejection, two incorrect assumptions were made based on statements by Applicant, taken out of context, namely:

(1) hydrino atoms (lower energy hydrogen atoms) cannot react with anything, except another hydrino atom; and

(2) hydrino atoms are so small that they will pass through the walls of whatever container they are formed in. Based on these assumptions, it is respectfully submitted that the Examiner improperly concluded that it would be impossible to produce something else from hydrino atoms under all conditions, since they can neither be contained nor reacted (except with another hydrino atom). [See May 24, 1999 Office Action at paragraph 2.]

As explained during the June 23, 1999 personal interview, and acknowledged by the Examiner in the Interview Summary, Applicant's statements referred to in the Rosenblum newsletter and interview do not limit hydrino atoms to reactions with only other hydrino atoms, and do not imply that hydrino atoms cannot be suitably contained. Therefore, as the Examiner has already acknowledged, it would indeed be possible to produce something else from hydrino atoms, namely the novel claimed compounds.

More specifically, as discussed during the personal interview, the cited Rosenblum newsletter and interview contain generalized statements made in reference to specific environmental concerns raised by Rosenblum. Applicant did not convey to Rosenblum in any way, shape, or form that the novel hydrinos are incapable of forming compounds under all conditions. Indeed, the present specification describes in clear and precise detail suitable conditions for using hydrino atoms in the claimed fuel cell and forming hydrino hydride ions.

It is important that the statements made by the Applicant, and relied upon by the

Examiner, be taken in their proper context. For example, on pages 2-3 of the Rosenblum interview, Rosenblum posed the question "They [referring to hydrinos], from what I have read, go off into space but would they also combine with oxygen and form water?". In response, the Applicant accurately stated that hydrino atoms cannot react to form ordinary water by reaction with oxygen since the hydrino atoms are at an energy state lower than normal hydrogen atoms. Under ordinary ambient conditions, the hydrino atoms cannot convert back to normal hydrogen atoms. Such conversion would require a very large amount of energy, such as that from a cosmic ray or very high energy particle. To emphasize this point only, the Applicant stated that the electron in the hydrino atom is "at such a very very low level, it's impossible for it to react with anything other than another low energy hydrogen atom." These statements by the Applicant clearly were in response to a specific question regarding the formation of ordinary water containing normal hydrogen atoms by reaction with oxygen, and thus in no way infer that hydrino atoms cannot be reacted in a fuel cell to form hydrino hydride ions and provide electricity. Thus, when read in context, Applicant's statement that "it's impossible for [a hydrino] to react with anything other than another low energy hydrogen atom" clearly refers to non-reactions with various forms of oxygen, such as O, O<sub>2</sub>, and O<sub>3</sub>, to form ordinary water. It should also be noted that the Applicant, understandably, did not volunteer to Rosenblum that hydrino atoms could be reacted in a fuel cell under suitable conditions to avoid public disclosure of the present invention at that time.

Applicant also did not convey in the Rosenblum newsletter and interview that hydrinos cannot be suitably contained under all conditions. In fact, Applicant stated just the opposite. For instance, on page 7 of the interview, Applicant stated that the hydrinos could be contained in a Mylar balloon for some period of time. Applicant also conveyed to Rosenblum that the hydrinos had been suitably contained in energy cells as demonstrated by the cell reactions described on page 7 of the Rosenblum interview.

Applicant merely conveyed in the Rosenblum newsletter and interview, as would be well understood by those skilled in the art, that the novel hydrino atoms and dihydrino molecules are difficult to store. Applicant did not convey that the hydrino atoms and

molecules could not be contained. Dihydrino molecules and hydrino atoms, like hydrogen molecules and atoms, are very small and thus are capable of dispersing through seals and minute cracks in containers over time. The fact that some dihydrino molecules or hydrino atoms can diffuse out of the container, does not mean that the dihydrino molecules or hydrino atoms cannot be suitably contained in sufficient amount and for sufficient time to conduct the desired reactions. To the contrary, as described in the present specification, and acknowledged by the Examiner in the Interview Summary, hydrino atoms can be suitably contained and reacted in the claimed fuel cell.

For these reasons, the Applicant respectfully submits that the claimed invention fully complies with Section 101. Accordingly, withdrawal of the Section 101 rejection is respectfully requested.

The rejection of claims 1-14 under 35 U.S.C. § 112, first paragraph, is respectfully traversed. Applicant respectfully submits that to the extent that the Examiner has based this rejection on the Rosenblum newsletter and interview this rejection is misplaced for the same reasons discussed above with regard to the Section 101 rejection. As acknowledged by the Examiner in the Interview Summary, hydrino atoms can be suitably contained and reacted in a fuel cell, as described in the present specification.

For these reasons, the Applicant submits that claims 1-14 fully comply with Section 112, first paragraph. Accordingly, withdrawal of the Section 112 rejection is respectfully requested.

The rejection of claims 1-14 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. As described on page 24 of the present specification and acknowledged by the Examiner in the Interview Summary, the hydrino atom is able to accept an electron from the cathode (ie. reduction) to form a hydride ion. Thus, the claimed language referring to the hydrogen being reacted at the cathode is accurate and complies with Section 112.

The part of the Section 112 rejection regarding claim 3 is obviated by the cancellation of claim 3.

As stated during the interview, an atom can have a "binding energy" between the

nucleus and electron. Furthermore, XPS spectroscopy measures the binding energy of each atom in a molecule. Thus, the claimed language "binding energy" is proper and complies with Section 112.

The Applicant submits that claims 1-14 fully comply with Section 112, second paragraph. Accordingly, withdrawal of the Section 112 rejection is respectfully requested.


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In view of all of the objections and rejections of record having been addressed, it is sincerely believed that the subject application is in condition for allowance and Notice to that effect is earnestly solicited.

Respectfully submitted,

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